



Pan American Health Organization



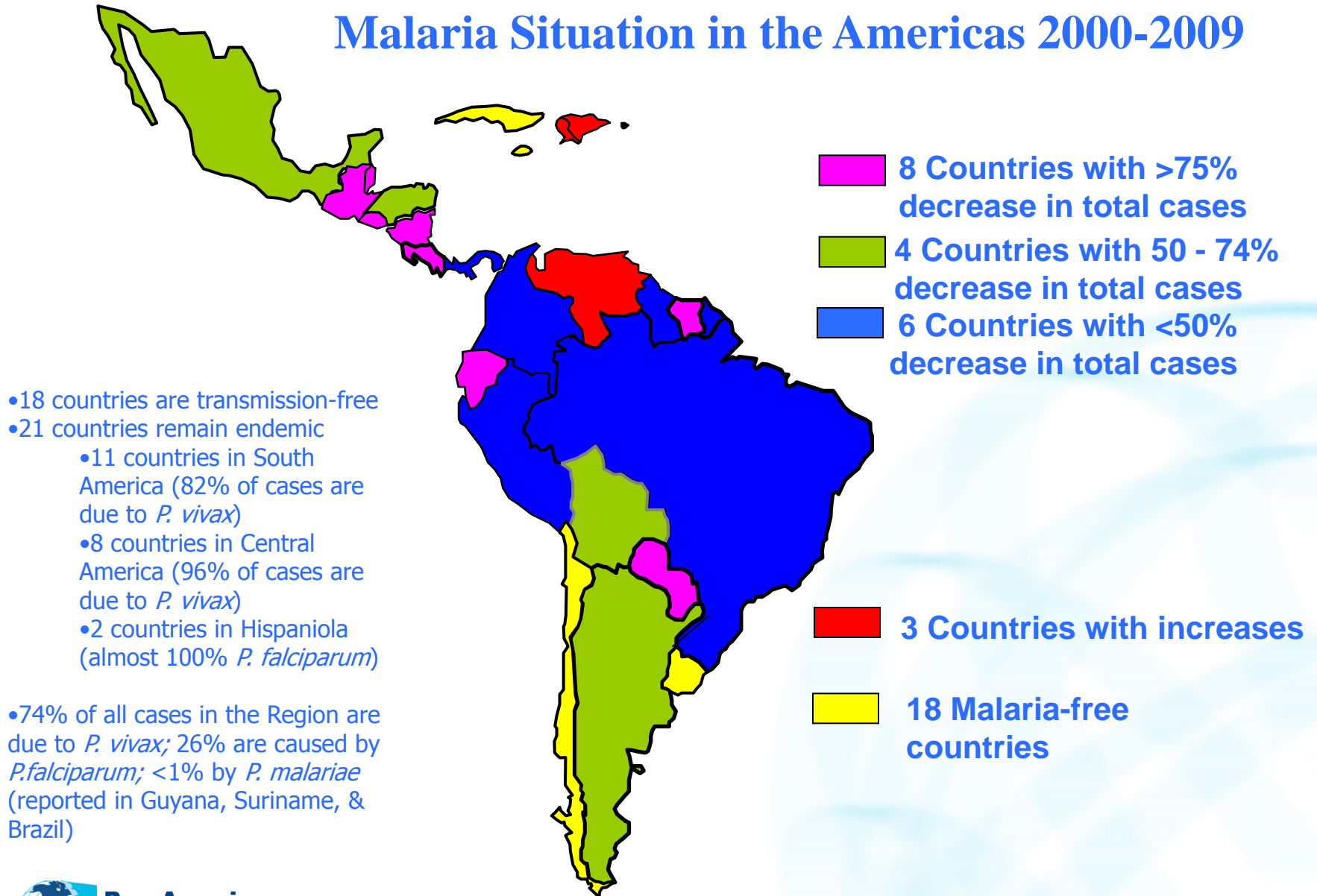
Regional Office of the
World Health Organization

Approaches for Malaria Prevention and Control towards Elimination

Keith H. Carter

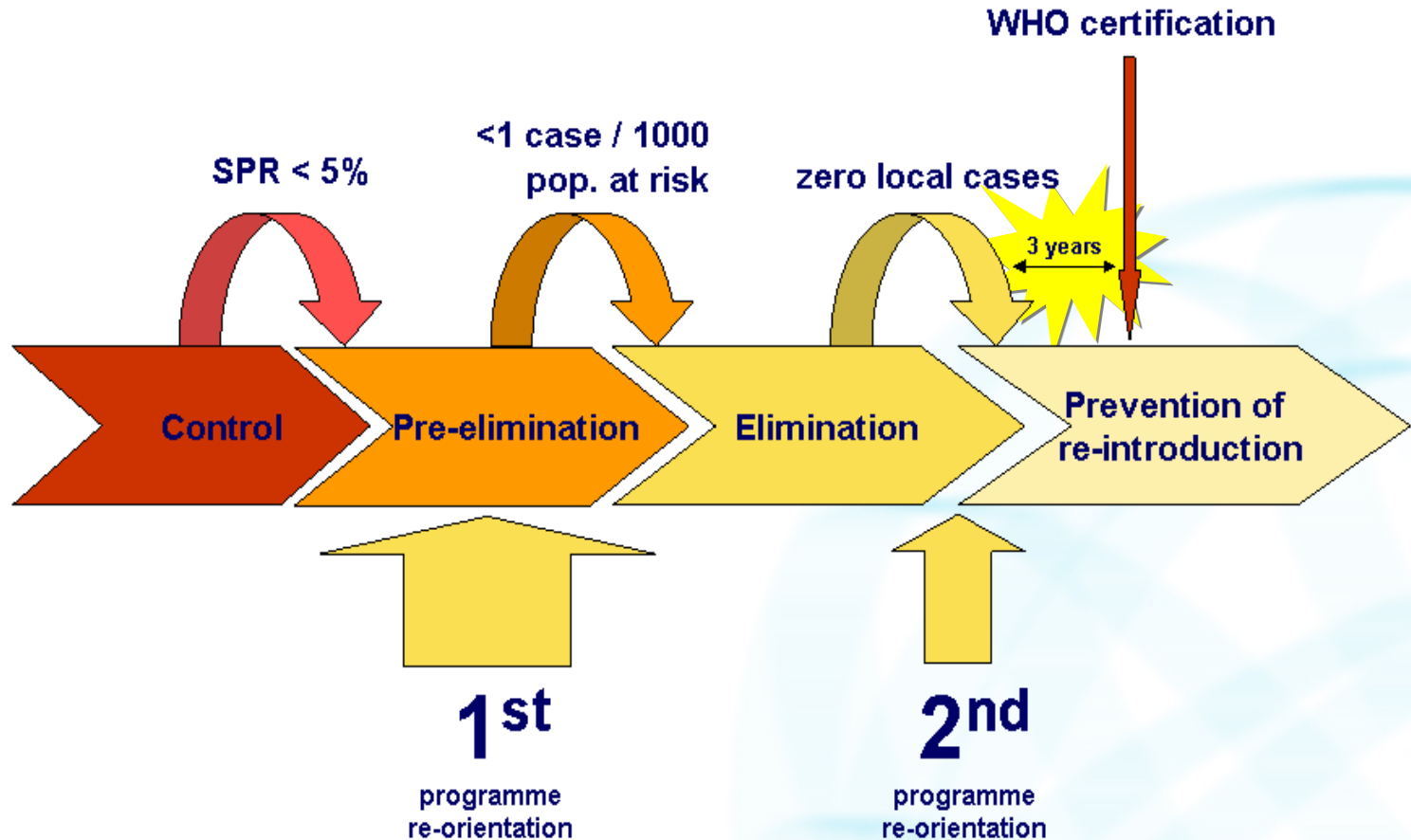
**PAHO/WHO Regional Advisor for Malaria
AMI / RAVREDA Annual Evaluation Meeting
Panama City, Panama • 22 - 24 March 2011**

Malaria Situation in the Americas 2000-2009



- 52% decrease in malaria cases for the entire Region
- 61% decrease in malaria deaths

From malaria control to elimination



Milestones for programme transition

SPR <5% in fever cases

What exactly: the monthly SPR among febrile patients with suspected malaria is consistently less than 5% throughout the year

Proxy: health facility data

Confirmation: HH parasite prevalence survey in peak transmission season among people of all ages with current fever (or fever < 24 hrs)

<1 case per 1000 population at risk per year

means less than 100 new malaria cases per year in a district with 100,000 people

Proxy: health facility data, notification reports

Confirmation: population-based surveys

zero locally acquired cases

Notification reports, individual case investigations, genotyping

Interventions by programme type

Pre-elimination

Drug policy change to include anti-gametocyte treatment

Engaging private sector, no OTC drugs

case confirmation by Giemsa-stained QA/QC microscopy

Geographical reconnaissance

Vector control (IRS as the main method)

GIS database on foci, vectors, cases

Central records and isolate bank

Trained, qualified staff availability

Mobilize domestic funding

Regional initiatives

Elimination

Implementation of new drug policy

Routine QA/QC expert microscopy

Free diagnosis and treatment

Full cooperation of private sector

Active case detection

Case investigation and classification Immediate notification of cases

Routine genotyping

Foci investigation and classification

Vector control to reduce receptivity in recent transmission foci

Prevention of malaria in travellers

Prevention of re-introduction

Prevention and management of imported malaria

Vigilance through general health services

Perfect case detection, investigation

Vector control to reduce receptivity in vulnerable areas

Outbreak control

Maintenance of central nucleus of malaria expertise

Integration of malaria programme staff into other health and VC programmes

WHO certification process

Assessing Feasibility

Technical Feasibility

- What is the current importation rate?
- What is the intensity of endemic transmission?
- Can malaria transmission be interrupted using the currently available control tools?
- Can a malaria-free status be sustained?

Operational Feasibility

- How strong is the current health system?
- What is the political and financial commitment to elimination?
- Size and accessibility of total population at risk?
- What measures must be in place to achieve the level of interventions required to reach and sustain elimination?

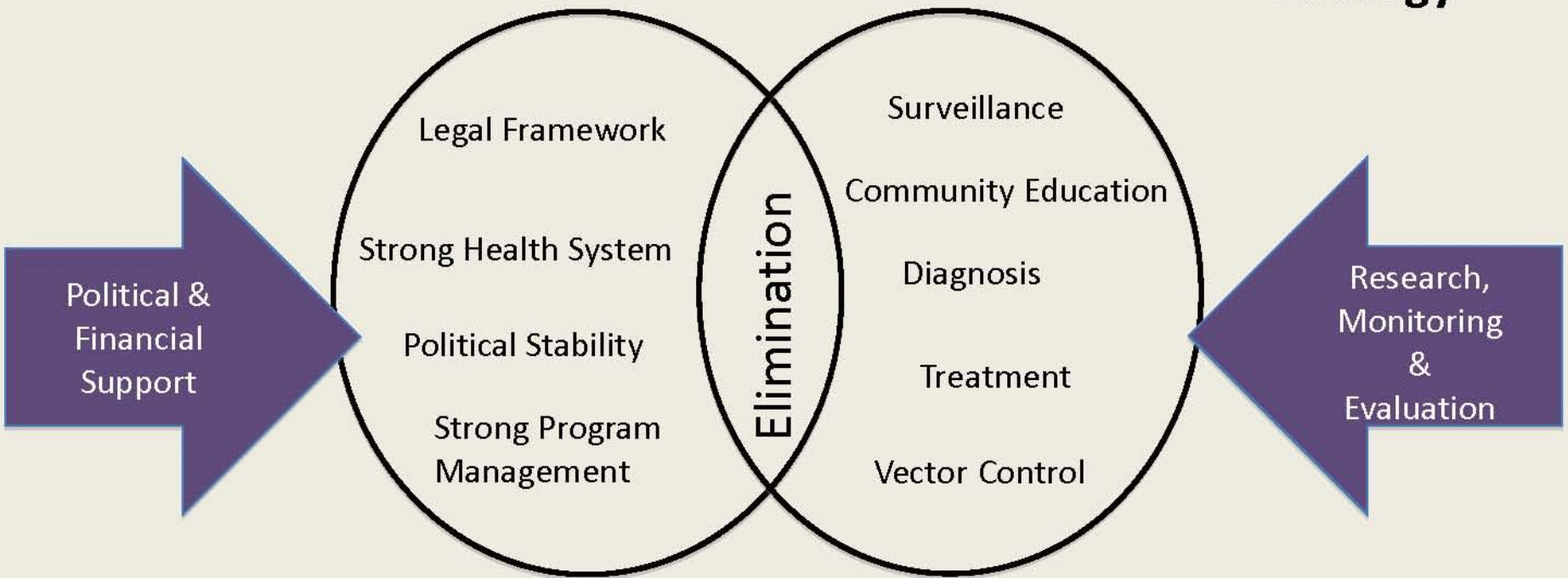
Financial Feasibility

- Is elimination a better use of money than controlling low levels of malaria?
- What is the cost of malaria elimination and preventing reintroduction?
- Can the country or region afford elimination and prevention of reintroduction over an indefinite period of time?

Elimination is not Business-as-Usual

Enabling Environment

Evidence-based Elimination Strategy



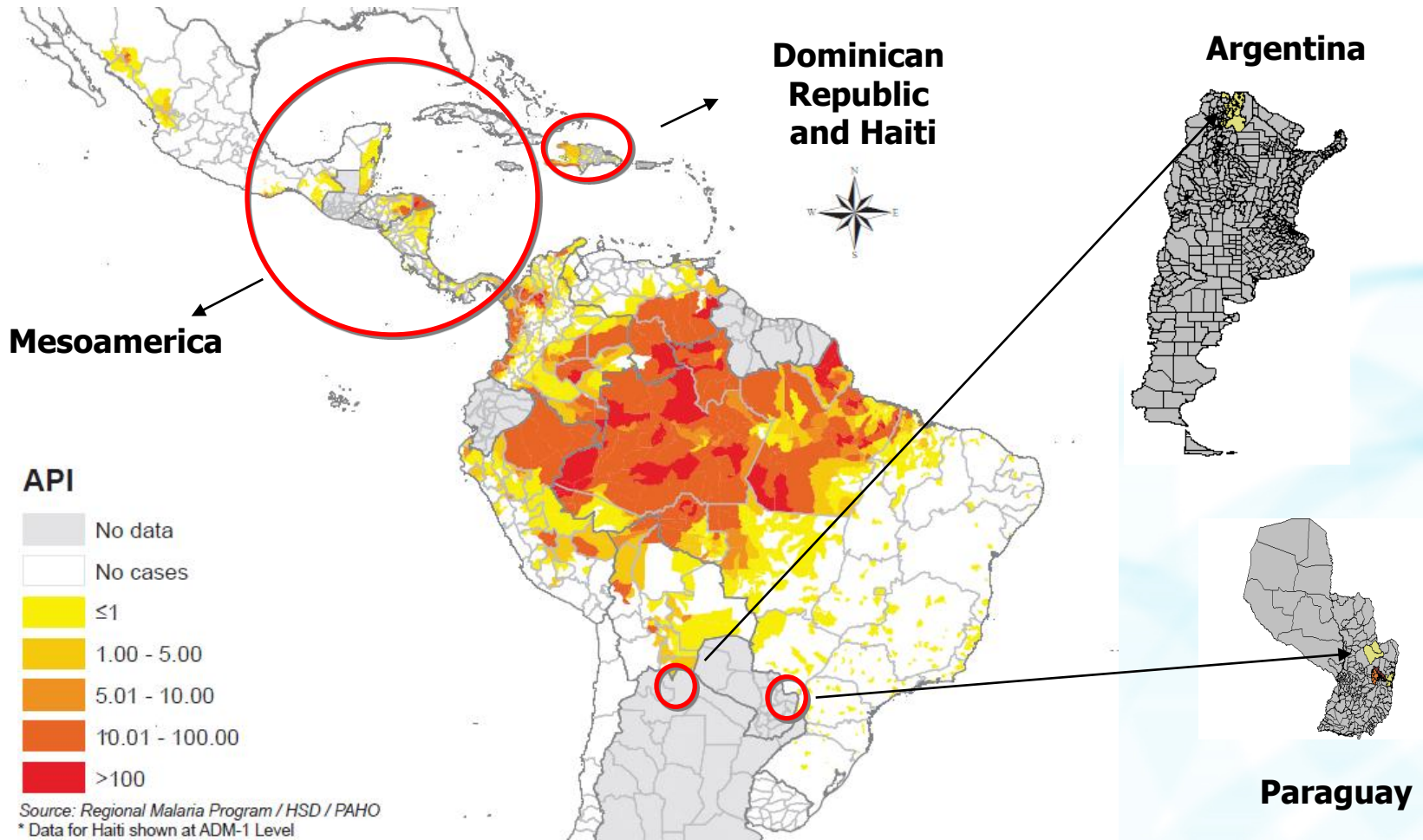
Strategy and Plan of Action for Malaria in the Americas 2011 – 2015: Components and Goals

- 1. Malaria Prevention, Surveillance, and Early Detection and Containment of Outbreaks**
 - To intensify efforts on malaria prevention, surveillance and early detection and containment of outbreaks in various program contexts
- 2. Integrated Vector Management**
 - To promote, strengthen, and optimize mechanisms and tools for judicious and cost-effective vector-management
- 3. Malaria Diagnosis and Treatment**
 - To strengthen access to prompt and accurate malaria diagnosis, and rapid treatment with effective anti-malarials
- 4. Advocacy, Communications, Partnerships and Collaborations**
 - To foster an environment that promotes sustainability and is supportive of collaborative efforts and best practices against the disease
- 5. Health Systems Strengthening, Strategic Planning, Operational Research, and Country-Level Capacity Building**
 - To optimize efforts towards strengthening health systems, strategic planning, operational research, and building capacities of nations to relevantly and adequately address their respective malaria challenges

Proposed Goals of PAHO Strategy and Plan of Action 2011 - 2015

- Roll Back Malaria and Millennium Development Goals (reduction malaria burden 50% by 2010 and 75% by 2015) compared with 2000.
- Inversion of increasing tendency in three countries
- Mesoamerican and Southern Cone countries in pre-elimination phase and progressing towards elimination
- Reduction of malaria-related mortality
- Zero reintroduction of malaria transmission in countries where eliminated

Malaria Elimination?



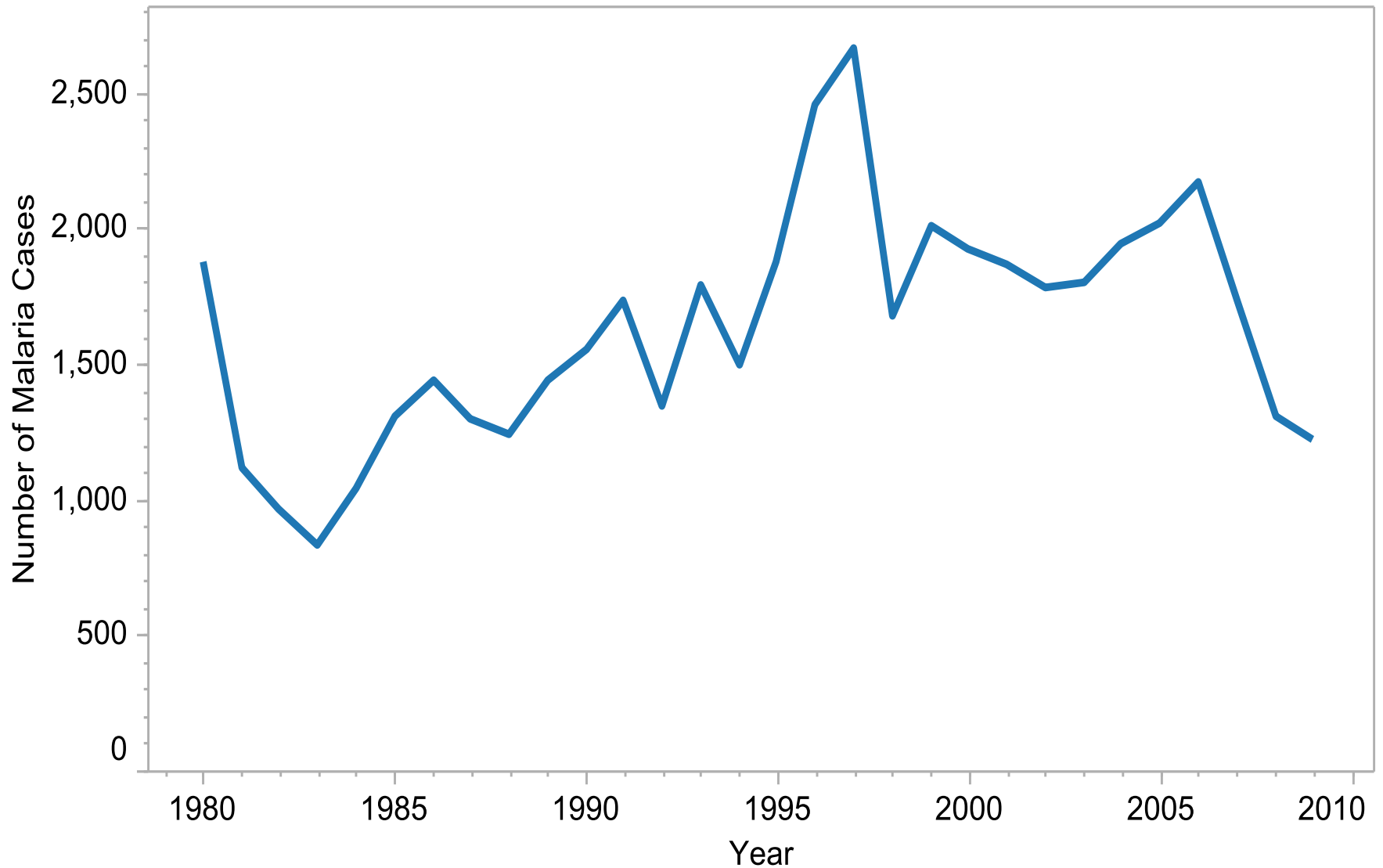
Techniques of malaria elimination

- Malaria Program performance review and re-orientation
- Difference between a control and elimination program
- ***Case based surveillance and Rapid response***
- ***Active and passive case screening and containment/***
- ***Mapping of cases and malaria foci and elimination of foci***
- Targeted and combined IRS, LLIN,LSM
- **Cross border/ trans- border malaria control and elimination**
- Malaria in migrants, travellers and special populations (Import and export)
- **Institutional framework for elimination. (Field surveillance agents, districts surveillance officers)**

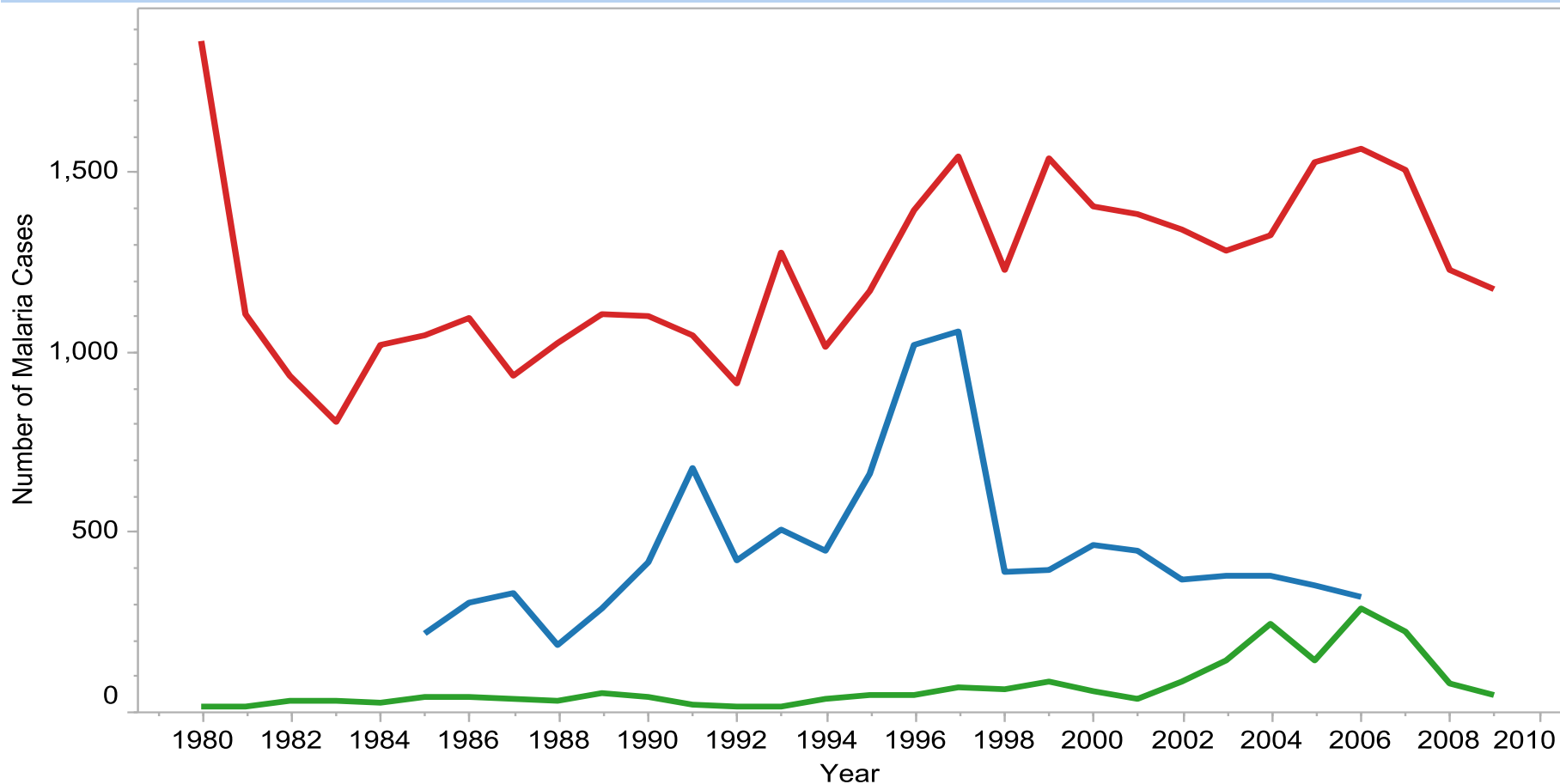
Cambios Requeridos

- Todos casos confirmados microscopicamente y tratados segun politica nacional
- Sistema gestion calidad diagnostico funcional
- Todos casos notificados, investigados epidemiologicamente y registrados
- Areas/focos transmision bien delimitadas e inventariado
- Base de datos creado, sistema geografica con informacion de casos, intervenciones, comportamiento vectores y parasitos
- Necesidades gerenciales, administrativas, tecnologicos, dentro de contextos sociales y salud publica identificadas

Malaria in nonendemic countries, 1980- 2009



Malaria in nonendemic countries, 1980- 2009



*Other countries excludes cases from Cuba

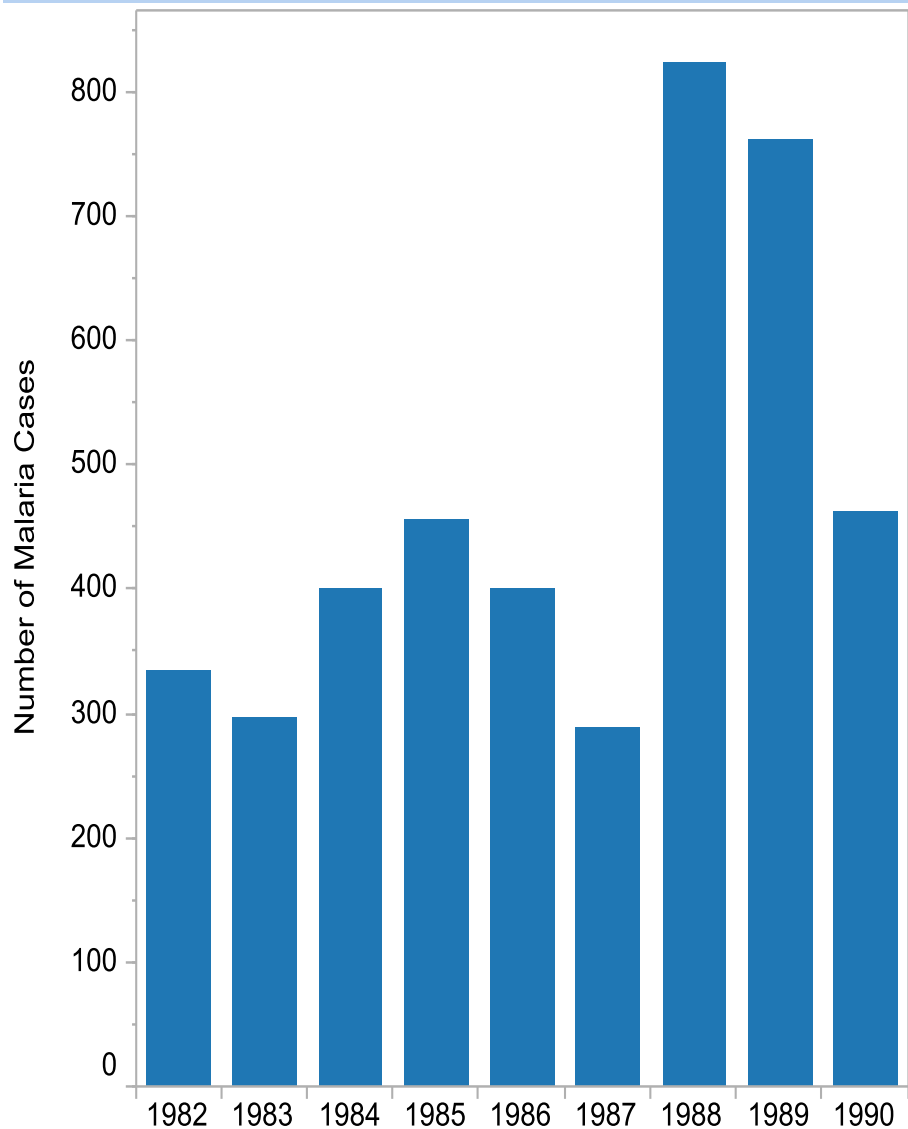
Country

- USA
- Canada
- Other Nonendemic countries

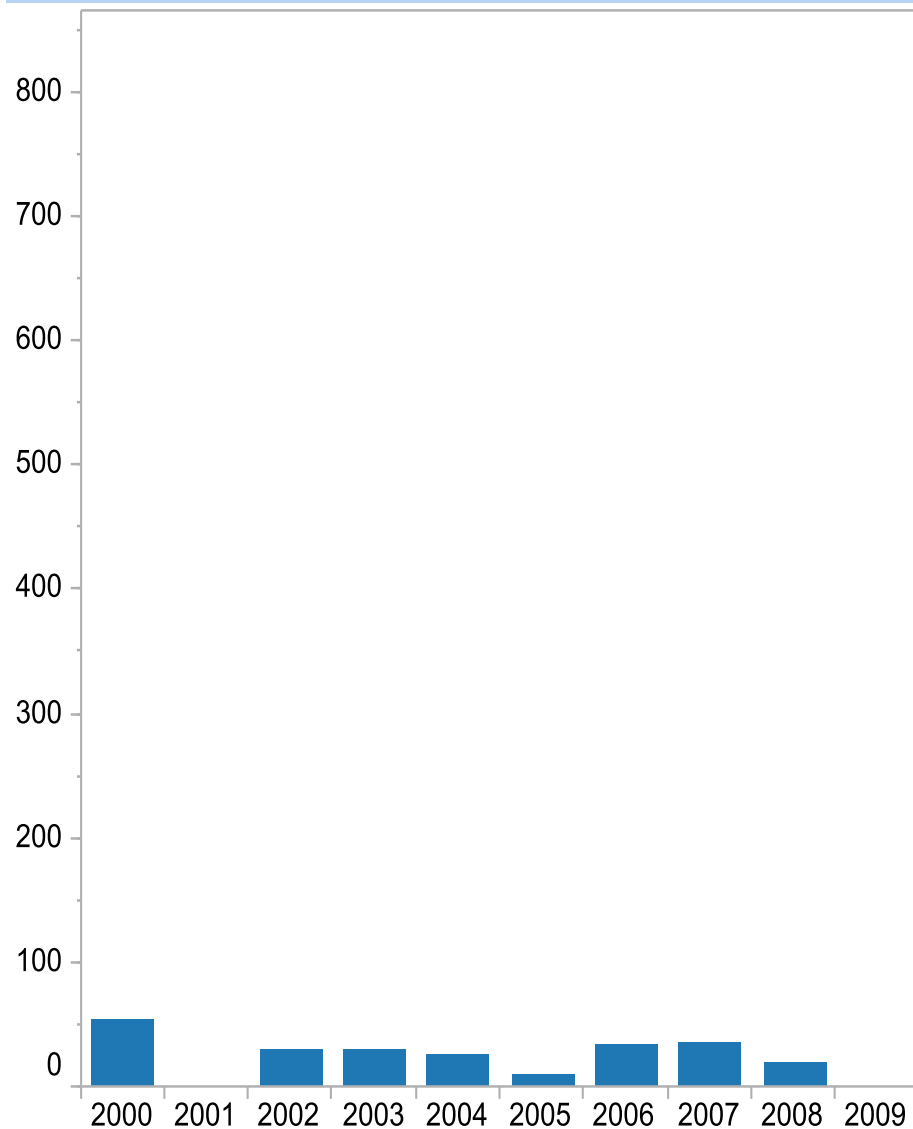


Source: Country Reports to PAHO/WHO

Malaria in Cuba, 1982- 1990



Malaria in Cuba, 2000- 09



Preventing Reintroduction?

- **USA: Imported cases annually, introduced cases, surveillance, outbreak response**

Cuba: Imported cases – soldiers, students, introduced cases, surveillance, outbreak response

Uruguay, Chile: imported cases - UN peacekeepers; minimal / no risk

Others: good fortune? imported cases, poor vector, weak surveillance

Jamaica Experience

1994-2003: average 6 imported cases / year

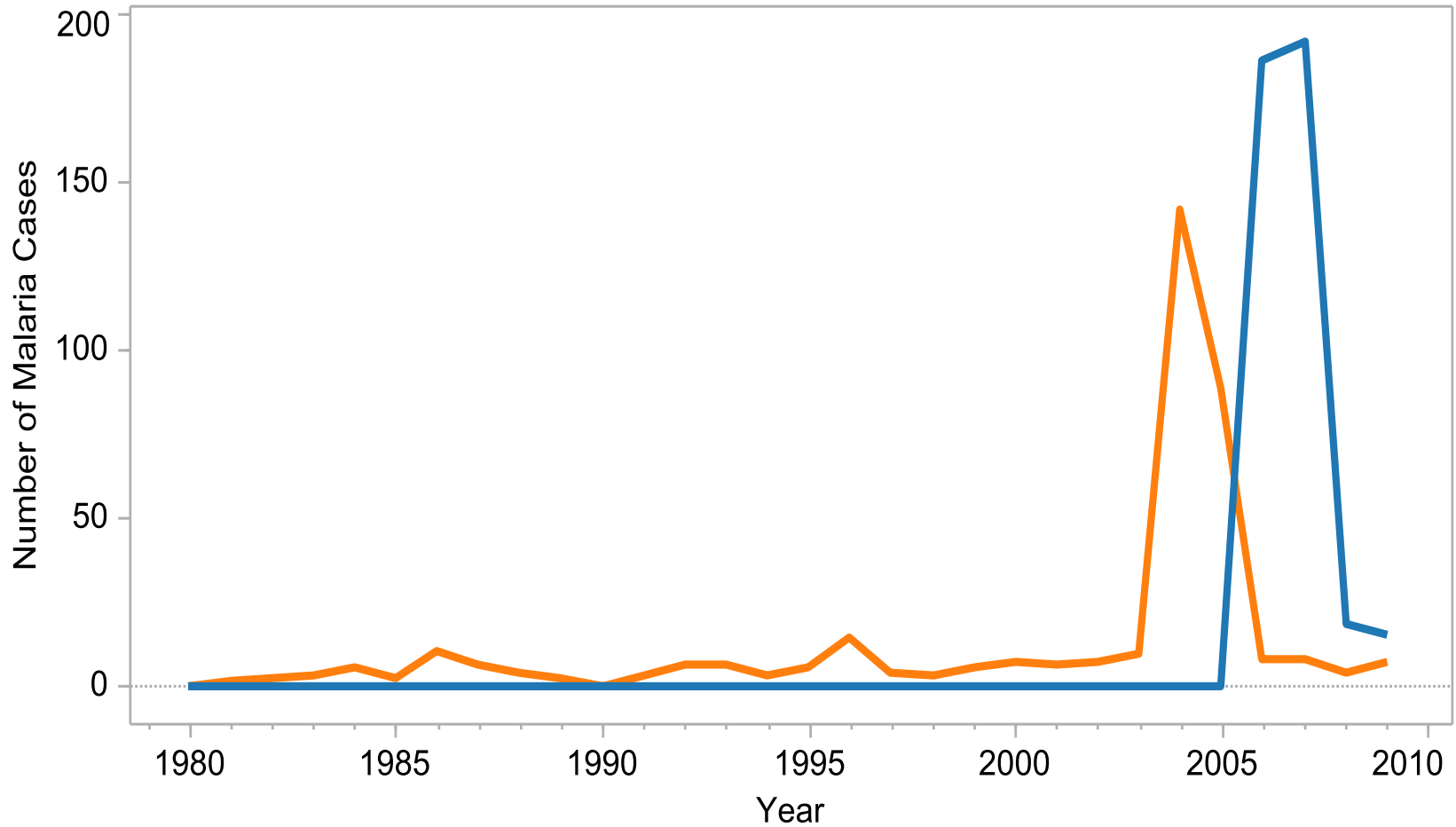
2004-2005: 144 and 88 imported cases resp.

70% imported by immigrants

Nov. 2006: 4 confirmed cases – residents

Emergency response (Nov 2006 – Oct 2009: 406 cases)

Malaria in Jamaica by origin of case, 1980- 2009



Origin of Case

■ Autochthonous ■ Imported

Bohío de trabajadores haitianos de la caña de azúcar (República Dominicana)





85



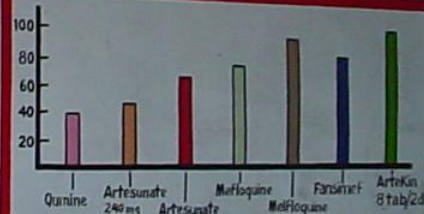
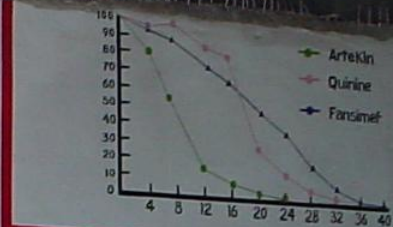


8 tablets 2-day malaria treatment

Artekin[®]
Compound Dihydroartemisinin

Holleykin Pharmaceutical Co.Ltd. Guangzhou, China

**tratamento em 2 dias
Contra a Malária**



Thank You
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